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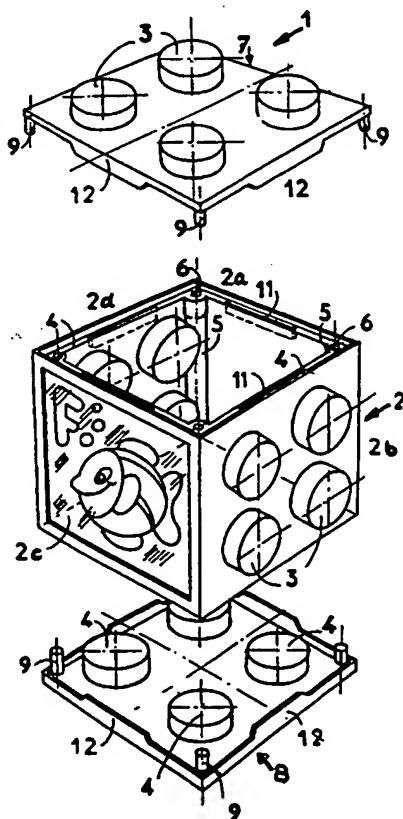
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(54) Title: TOY BUILDING BLOCKS



(57) Abstract: A toy building block has a first pair of transversely extending face panels having substantially identical studs and a second pair of respectively transversely extending face panels having substantially identical sockets. The sockets are shaped and dimensioned to be push fit engageable with studs on adjacently connecting corresponding blocks, the arrangement of studs and sockets permitting connection with opposite gender face panels in various connection configurations, including a face panel aligned configuration and a face panel overlap configuration. The block is formed of a moulded shell piece including wall panels moulded to be configured rigidly extending transversely to one another in fixed relationship with a defined angle therebetween, and a closure piece connected to the shell piece to close a hollow interior of the block.

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Toy Building Blocks

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The present invention relates to toy building blocks. Particularly to building blocks suitable for connection to one another.

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The educational value of children's building block systems is well known and a number of systems have been proposed and/or reached commercialisation. Known building block systems are disclosed in, for example, GB-A-231502, GB-A-2118447, GB-A-1350621, GB-A-1376301, US-A-5683283 and US-

15

A-4602908.

An improved building block and system has now been devised.

20

According to a first aspect, the invention provides a toy building block including:

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(a) a first pair of respectively transversely extending face panels provided with male gender connection formation means facilitating connection with respective adjacently arranged blocks, the male gender connection formation means for each face comprising at least two substantially identical studs;

30

(b) a second pair of respectively transversely

extending face panels provided with female gender connection formation means facilitating connection with respective adjacently arranged blocks, the female gender connection formation means for each face panel comprising at least two substantially identical sockets;

Wherein, the sockets are shaped and dimensioned to be push-fit/interference-fit engageable with respective studs on adjacently connecting corresponding blocks, the studs and sockets on the face panels of the block being so spaced and configured to permit connection with opposite gender face panels in a plurality of connection configurations, including a face panel aligned configuration and a face panel overlap configuration.

The arrangement of transverse/substantially perpendicular face panels provided with connection formation means facilitating connection with an adjacently arranged blocks enables blocks to be connected side by side as well as one upon another. This enables a highly versatile building block system to be achieved.

The studs and sockets on the male and female gender face panels are preferably spaced from one another by a distance of substantially  $2x$ , where  $x$  is the distance between the edge of the panel and the nearest extremity of a respective stud or socket. Desirably the spacing between adjacent studs or sockets on a respective face panel is substantially  $2x$ . Beneficially, the distance

between the extremities of a stud or socket (corresponding to the diameter for circular perimeter formations) is substantially 2x. The outer perimeter of the face panels is preferably square such that the overall configuration of the block is cuboid. The respective studs and sockets on the male and female gender face panels are preferably arranged in 2 x 2 arrays.

The block according to the invention permits a female gender face panel of a connecting corresponding block to be connected to the complementary male gender face panel of an object block in a plurality of configurations in which the connection may be facilitated by engagement of one, two or four pairs of engaging opposed gender formations. In the embodiment defined, the four formation engagement would give a face panel to face panel match up (face panel aligned configuration); one or two pairs of engaging formations give a face panel overlap configuration. Where one pair only of formations are used to make the connection, the corresponding face panels of adjacent blocks may be inclined at angles to one another. Where circular perimeter formations are utilised, the one pair connection configuration enables the connected blocks to be rotated relative to one another about the connected formations.

Desirably the block comprises two sets of opposed face panels provided with connection formation means.

Desirably non-opposed face panels (and also preferably opposed face panels) are of substantially the same face

area.

Desirably at least one of the faces of the block is without connection formation means. Preferably two face panels of the block (most preferably opposed face panels) are without connection formation means. It is preferred that one or more face panels without connection means are arranged to carry an indicia, design, character or other graphic representation. This enables for example a large 'composite' picture to be built up from an assembly of blocks, or words to be formed using connected blocks each carrying a respective letter character.

Desirably opposed faces of the block are provided with connection formations of opposed gender.

The cube shaped block provides the 'basic' constructional element of a children's building block system. Other shaped blocks are envisaged as comprising the system including for example triangular face panelled blocks and rectangular face panelled blocks

According to a further aspect the invention therefore provides a toy building construction system or kit comprising a plurality of building blocks according to the first aspect of the invention.

According to a further aspect, the invention provides a building block comprising a male gender face panel having an array of rows and columns of stud formations and a female gender face panel having an array of socket

formations corresponding to the male array of studs, the studs and sockets on the male and female gender face panels are preferably spaced from one another by a distance of substantially  $2x$ , where  $x$  is the distance  
5 between the edge of the panel and the nearest extremity of a respective stud or socket.

Beneficially, the distance between the extremities of a stud or socket (corresponding to the diameter for circular  
10 perimeter formations) is substantially  $2x$ .

The connection formation means for a respective face therefore preferably comprises an array of formations arranged to mate with a complementary array provided on an  
15 adjacently connecting block. The array preferably has a perimeter spaced inwardly from the edge of a respective face. The array preferably comprises formations of all male studs or all female recesses. Desirably, the formations comprising the array have an axis and are most  
20 preferably substantially circular in cross section along a plane substantially parallel to the respective face. Beneficially, the depth of the formations is less than the width dimension (e.g. the diameter) of the respective formation. The spacing between the formations in the  
25 array is preferably greater than the distance between the formations and their respectively closest edge of a respective face. Desirably an array comprises four formations arranged in a two by two matrix.

30 It is preferred that the toy block is substantially hollow. Preferably the block comprises a plastics

material, the block comprising, preferably moulded plastics material, the connection formation means preferably being integrally moulded with the respective face.

5

Desirably the block comprises a moulded plastics building block comprising a moulded shell element including wall panels moulded to be configured rigidly extending transversely to one another in fixed relationship with a defined angle therebetween, and closure means to close a hollow interior of the block, the closure means including one or more wall panel elements to be connected to the shell element.

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Accordingly, a further aspect of the invention provides a method of manufacturing a toy building block, the method comprising assembling:

15

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i) a moulded plastics shell element including wall panels moulded to be configured rigidly extending transversely to one another in fixed relationship with a defined angle therebetween; and,

25

ii) a separate wall panel element connecting with the walled shell element to close an interior of the block.

30

Forming the block in this way enables the shell element and shell closing wall panel element to be moulded separately permitting construction of a block having

male/female connection elements on perpendicular face panels. This is difficult to achieve with conventional 'one shot' block moulding techniques.

- 5 The moulding preferably forms the connection formation means integrally with the respective faces.

Desirably the moulded shell element is formed having male connection formation means on a first face panel and  
10 female connection means on a second face panel. It is preferred that the moulded shell element is formed having connection formation means on opposed face panels, preferably male connection means on a first face panel and female connection means on the opposed face panel. The  
15 moulded shell element is preferably formed as a tube having orthogonal wall panels.

Desirably the shell element and the separate end face panel are provided with complementary engageable securing  
20 formations permitting the end face panel to be securely and preferably effectively permanently fixed across the opening of the shell element. Alternatively or additionally a bonding material (such as a curable bonding material) may be applied to the shell element and/or the  
25 end face panel element and/or the complementary engageable securing formations to facilitate fixing.

The complementary engaging securing formations are preferably configured such that either a push fit  
30 engagement or a snap fit engagement is provided. desirably, the complementary engaging securing formations



are provided at the periphery of the wall panel element and the opening of the shell element.

5 In a preferred embodiment the complementary engaging securing formations preferably comprise pins arranged to be received in complementary dimensioned bores in a push fit engagement. Additionally or alternatively it is preferred that the complementary engaging securing formations comprise tongue and groove like mating elements  
10 (such as a tab receivable in a slot) extending along one or more edges of the face panel element and shell element. It is preferred that the tongue and groove like engaging formations are push fit engageable with one another.

15 In a preferred embodiment, the shell element comprises a substantially tubular element having opposed open ends, each of which is closed by a respective separate end wall panel element. The tubular element preferably has four face panels defining a cube shape when the separate end  
20 wall panel elements are fixed in position.

The separate end wall panel elements preferably include connection formation means facilitating connection with an adjacently arranged blocks. It will be readily apparent,  
25 that the block and method of construction provided by the invention permit the shell element to be combined with various configurations of connection formation means (male female or none) enabling a maximum versatility for manufacture using basic components. Additionally face  
30 panels of various colours may be fixed to shell elements of different colours to enhance the visual stimulatory

effect. This is perceived to be a major advantage of the invention over prior art blocks.

5 According to a further aspect, the invention provides an assemblage comprising a plurality of image elements having commonly coded image edge portions which permit image elements to be positioned in an edge adjacent relationship in a plurality of configurations in which the commonly coded image edge portions of adjacent elements are matched  
10 substantially to one another.

Desirably, the image element comprises upper and lower edges and two side edges such that the image element is preferably rectangular or square. Desirably the upper  
15 edge is coded to match with the lower edge and the side edges coded to match one another.

It is preferred that the image elements are provided with first and second opposed edges of a first common image coding and third and fourth edges of a second common image  
20 coding.

Beneficially, the coded image element edge portions are coded imagewise such that the coding of the edge portions  
25 is effected by portions of a general image or scene depicted upon relevant image elements.

Desirably coded image element edge portions comprise a plurality of differently coded zones along respective edge  
30 portions.

The coded image element edge portions are preferably coded by means of colour (preferably coloured edge zones).

5 In a preferred embodiment the image element includes commonly coloured upper and lower edge zones and commonly coloured opposed side edge zones.

10 The coloured edge zones preferably comprise a backing to a primary image, character or other emblem presented on the element.

15 The image element is beneficially arranged to be mounted on a face panel of a toy building block, preferably a toy building block including connection formation means facilitating connection with an adjacently arranged blocks. Most preferably, the image element is arranged to be mounted on a face panel of a toy building block in accordance with the first aspect of the invention.

20 According to a further aspect, the invention provides a toy building construction kit or set comprising:

25 a plurality of a toy building blocks including face panels (preferably substantially perpendicular face panels) provided with connection formation means facilitating connection with an adjacently arranged blocks; and,

30 a plurality of image elements for mounting on substantially planar faces of respective blocks, the image elements having commonly coded image edge

portions permitting image element carrying blocks to be positioned in an edge adjacent relationship in a plurality of configurations in which the image edge portions of adjacent elements are matched substantially to one another.

In one embodiment, the image elements are adhesive backed permitting a user to apply a desired set of image elements to a set of blocks. Alternatively, the image elements may be printed or moulded onto the relevant face panel.

The invention will now be further described in specific embodiments by way of example only and with reference to the accompanying drawings, in which:

Figure 1 is a perspective exploded view of a first embodiment of toy building block according to the invention;

Figure 1a is a scrap sectional view of the face panel securing engagement connection with the shell element;

Figure 2a is a schematic plan elevation of a toy building block according to the invention having an end panel element not in position;

Figure 2b is a schematic side view of the building block having end panel elements not in position;

Figure 2c is a schematic sectional view of the securing bore of the shell element;

Figure 3a is a schematic plan view of a first end panel element (moulded with an integral array of male studs);

Figure 3b is a schematic side view of the end panel element of Figure 3a;

Figure 4a is a schematic plan view of a second end panel element (moulded with an integral array of female recesses);

Figure 4b is a schematic side view of the end panel element of Figure 4a;

Figure 5 is a schematic part sectional view of a securing fixing pin carried by the face panel elements;

Figure 6 is an exploded perspective view of an alternative embodiment of building block according to the invention;

Figure 7 is a schematic view of a building block carrying an exemplary image element for use in creating an assemblage according to the invention;

Figure 8 is a schematic view of an array of connected blocks (including the block of figure 7) in an assemblage according to the invention; and,

Figure 9 is a schematic view of the array of blocks in figure 8 connected in an alternative assemblage configuration.

Referring to the drawings, and initially to Figure 1, the children's toy cube building block (generally designated 1) comprises a tubular moulded plastics body 2 having integrally moulded face panels 2a, 2b, 2c, 2d defining a unitary wall around an internal void region. Face panels 2b and 2d are provided with respective two by two arrays of block-to-block connection formations, panel 2b being provided with all-male cylindrical stud studs 3 and face panel 2d including a corresponding array of cylindrical recesses 4. The shape, dimension and spacial configuration of studs 3 and recesses 4 is such that the array of studs 3 on face 2b of first toy building block can matingly engage in releasable push fitting engagement with a complimentary array of recesses for an adjacently connected building block. Similarly, recesses 4 on face panel 2d receive an array of studs on a further adjacently connected building block.

An important feature of the invention is that, for the moulded, substantially hollow, tubular element 2, the array of male studs 3 is provided on an opposed face to the array of female recesses 4. This enables the tubular element to be moulded using relatively standard plastics injection moulding techniques.

A recessed shoulder 4 is provided around each respective open end of the tubular element 2, the recessed shoulder being enlarged at respective corner bosses 5, each of which is provided with a blind bore 6. The upper surface of the shoulders 4 are provided with respective elongate slots 11.

Separate end wall panels 7, 8 of moulded plastics construction are provided with integrally moulded pins 9 shaped, dimensioned and configured to matingly engage in push fit connection with respective blind bores 6 provided in the bosses 5 of the recessed shoulder 4. The longitudinal edges of the separate face panels 7, 8 are provided with downwardly extending integrally moulded tabs 12 shaped, dimensioned and configured to matingly engage in push fit connection with respective slots 11 provided in the recessed shoulder 4. When push fit mated into the respective bores 6 and slots 11, the pins 9 and tabs 12 ensure that the respective end face panel 7, 8 is securely (and effectively permanently) secured to the tubular element 2 and effectively closing the hollow interior of the block.

As shown in figure 5, pins 9 taper outwardly from a root connecting to the panel element 7,8, to a head 15 chamfered to ease insertion into respective bores 6. The maximum diameter of the head of pin 9 is greater than the root diameter; such an outwardly tapering pin enhances the interference fit of pins 9 on bores 6.

The face panel fixing arrangement including the corner pins 9 and elongate slot and tab mating provides particularly good and effectively permanent connection between the shell element and the end face panels. The pins 9 and bores 6 ensure good connection force at the corners; the slots 11 and tabs 12 ensure good connection along the end face panel edges. The pull apart force required to separate the end panel faces from the shell

element is significantly greater than the force required to separate adjacently connected blocks by disengaging a male stud array 3 from a female recess array 4.

5 An important feature of the invention is the flexibility of the arrangement, in that respective end face panels 7, 8 may be provided with an array of male studs 3 or female recesses 4. This enables a "core" module comprising the tubular element 2 to be connected with end panels 7, 8 as  
10 required enabling a variety of different building block configurations and designs to be manufactured from a number of "core" elements. For example, blocks having from three male stud arrays and one female recess array to one male stud array and three female recess arrays are  
15 possible. It will also be appreciated that end elements 7, 8 could, additionally, comprise planar face elements (not including any male or female formations 3, 4). Additionally, the flexibility of the design enables end face panels 7, 8 of different colours, textures or other  
20 variables to be mated with the tubular element 2.

A further important feature relates to the arrangement and configuration of the male studs 3 and female sockets 4. As shown most clearly in figure 2b The studs 3 and sockets  
25 4 on the male and female gender face panels are spaced from one another by a distance of substantially  $2x$ , where  $x$  is the distance between the edge of the panel and the nearest extremity of a respective stud 3 or socket 4. The diameter of respective studs 3 or sockets 4 is  
30 substantially  $2x$ .



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5 The block according to the invention permits a female gender face panel of a connecting corresponding block to be connected to the complementary male gender face panel of an object block in a plurality of configurations in which the connection may be facilitated by engagement of one, two or four pairs of engaging opposed gender formations. In the embodiments shown, engagement of studs 3 of an adjacent identical block with all four sockets 4a, 4b, 4c, 4d would give a face panel to face panel match up (face panel aligned configuration); engagement of the 10 identical block with two sockets (for example 4a and 4b only) would give a face panel overlap configuration for the connected blocks. Where an adjacent block is connected by a single stud only engaging, for example 15 socket 4a, the corresponding face panels of adjacent blocks may be inclined at angles to one another, and furthermore the connected blocks can be rotated relative to one another about the connected stud 3 and socket 4a. The system is therefor extremely versatile in the 20 constructional arrangements permitted and therefore provides an enhanced educational system.

25 Referring now to Figure 6, there is shown an alternative embodiment of toy building block 101 according to the invention in which the tubular element 102 again includes respective arrays of male studs 103 and female recesses 104 provided on opposed faces.

30 The end face panels 107, 108 which connect with tubular element 102 (and thereby close the open ends) are provided at opposed edges with collar studs 109 which are arranged

to slide over respective ramp formations 106 (provided on the internal faces of panels 102d, 102b), and snap back to a "normal" position abutting a rear shoulder of ramp 106. The abutment of collars 109 with the rear shoulders of  
5 respective ramp formations 106 substantially inhibits disassembly of the respective end face panels 107, 108 from the tubular element 102.

One or both of the planar face panels (for example panels  
10 2a, 2c in figure 1) are typically provided with an image or character element. When upper or lower or side by side adjacent blocks are connected a character or image wall depicting a series of images or characters can be built up. Letter characters can be used to build up words and  
15 sentences and thereby aid in reading development of children.

Alternatively, adjacent image elements can be used to build up a composite image (in a similar manner to  
20 assembling a jigsaw puzzle). In a preferred embodiment the image elements in a set of toy construction blocks have commonly coded image edge portions permitting the images on the blocks to be assembled in a variety of different configurations whilst maintaining sense of the  
25 overall image. Such an arrangement is shown in figures 7 to 9.

The block shown in figure 7 has upper and lower fringe edge) zones of orange colour. All other blocks in the  
30 assemblages of figures 8 and 9 include corresponding upper and lower fringe zones of orange colour. This permits any

of the blocks in the array to be connected with any other block in an upper or lower connecting position and the orange colour fringes will match up. The block shown in figure 7 has side edge connecting bands 22, 23 extending across the image and providing a backing scene to the primary images of the old man 24, bird 25 and tree 26. The side edge connecting band 22 is yellow in colour; the side edge connecting band 23 is green in colour. All other blocks in the assemblage arrays of figures 8 and 9 include corresponding yellow and green colour edge connecting bands. This permits any of the blocks in the array to be connected with any other block in a side edge to side edge connecting position and the yellow and green colour bands will match up.

This system has a benefit in that it is extremely easy for a child to achieve a progress result, and also begins to teach colour matching.

The use of a 'jigsaw' wall built up from image carrying elements using blocks having block to block connection formations on perpendicular faces enables a solid and sturdy image construction to be conveniently achieved.

claims:

1. a toy building block including:

5 (a) a first pair of respectively transversely  
extending face panels provided with male gender  
connection formation means facilitating  
connection with respective adjacently arranged  
blocks, the male gender connection formation  
10 means for each face panel comprising at least  
two substantially identical studs;

(b) a second pair of respectively transversely  
extending face panels provided with female  
15 gender connection formation means facilitating  
connection with respective adjacently arranged  
blocks, the female gender connection formation  
means for each face panel comprising at least  
two substantially identical sockets;

20 wherein, the sockets are shaped and dimensioned to be  
push-fit/interference-fit engageable with respective  
studs on adjacently connecting corresponding blocks,  
the studs and sockets on the face panels of the block  
25 being so spaced and configured to permit connection  
with opposite gender face panels in a plurality of  
connection configurations, including a face panel  
aligned configuration and a face panel overlap  
configuration.

30

2. A toy building block according to claim 1, wherein the studs and sockets on the male and female gender face panels are spaced from one another by a distance of substantially  $2x$ , where  $x$  is the distance between the edge of the panel and the nearest extremity of a respective stud or socket.  
5
3. A toy building block according to claim 2, wherein the distance between the extremities of a stud or socket (corresponding to the diameter for circular perimeter formations) is substantially  $2x$ .  
10
4. A toy building block according to any preceding claim, wherein the outer perimeter of the face panels is substantially square such that the overall configuration of the block is cuboid.  
15
5. A toy building block according to claim 4, wherein the respective studs and sockets on the male and female gender face panels are arranged in  $2 \times 2$  arrays.  
20
6. A toy building block according to any preceding claim including face panels moulded of different coloured plastics.  
25
7. A toy building block according to any preceding claim, wherein non-opposed face panels are of substantially the same face area.  
30
8. A toy building block according to any preceding claim

wherein opposed face panels are of substantially the same face area.

- 5           9.    A toy building block according to any preceding claim, wherein at least one of the faces of the block is without connection formation means.
- 10          10.   A toy building block according to any preceding claim wherein a pair of opposed face panels are without connection formation means.
- 15          11.   A toy building block according to claim 9 or 10, wherein one or more face panels without connection means are arranged to carry an indicia, design, character or other graphic representation.
- 20          12.   A toy building block according to any preceding claim, wherein opposed faces of the block are provided with connection formations of opposed gender.
- 25          13.   A toy building block according to any preceding claim, wherein the connection formation means for a respective face comprises an array of formations arranged to mate with a complementary array provided on an adjacently connecting block.
- 30          14.   A toy building block according to claim 13, wherein each respective array comprises formations of all male studs or all female recesses.

15. A toy building block according to any preceding claim, wherein the depth/height of the formations is less than the width dimension (e.g. the diameter) of the respective formation.

5

16. A toy building block according to any preceding claim, wherein toy block is substantially hollow.

10

17. A toy building block according to any preceding claim, wherein the face panels are of moulded plastics material the connection formation means being integrally moulded with the respective faces.

15

18. A toy building block according to any preceding claim, wherein the block comprises a moulded plastics building block comprising a moulded shell element including wall panels moulded to be configured rigidly extending transversely to one another in fixed relationship with a defined angle therebetween, and closure means to close a hollow interior of the block, the closure means including one or more wall panel elements to be connected to the shell element.

20

19. A toy building construction system or kit comprising a plurality of building blocks according to any preceding claim.

25

20. A method of manufacturing a toy building block, the method comprising assembling:

30

i) a moulded plastics shell element including wall

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panels moulded to be configured rigidly extending transversely to one another in fixed relationship with a defined angle therebetween; and,

5

ii) a separate wall panel element connecting with the walled shell element to close an interior of the block.

10

21. A method according to claim 20, wherein the shell element is formed having connection formation means formed integrally with the respective face panels.

22. A method according to claim 21, wherein:

15

i) the moulded shell element is formed having male connection formation means on a first face panel and female connection means on a second face panel; and/or

20

ii) the moulded shell element is formed having connection formation means on opposed face panels.

25

23. A method according to any of claims 20 to 22, wherein the shell element and the separate end wall panels are provided with complementary engageable securing formations permitting the end face panel to be securely effectively permanently fixed across the shell element.

30



24. A method according to claim 23, wherein the complementary engaging securing formations are preferably configured such that either a push fit engagement or a snap fit engagement is provided.

5

25. A method according to claim 23 or claim 24, wherein the complementary engaging securing formations are provided at the periphery of the face panel element and the opening of the shell element.

10

26. A method according to any of claims 23 to 25, wherein the complementary engaging securing formations comprise:

15

i) pins arranged to be received in complementary dimensioned bores in a push fit engagement; and/or

20

ii) tongue and groove like mating elements (such as a tab receivable in a slot) extending along one or more edges of the face panel element and shell element.

25

27. A method according to any of claims 20 to 26, wherein the shell element comprises a substantially tubular element having opposed open ends, each of which is closed by a respective separate end wall panel element.

30

28. An assemblage comprising a plurality of adjacently

connected blocks according to any of claims 1 to 19,  
respective blocks including respective image elements  
having commonly coded image edge portions which  
permit image elements to be positioned in an edge  
adjacent relationship in a plurality of  
configurations in which the commonly coded image edge  
portions of adjacent elements are matched  
substantially to one another.

29. A building block comprising a male gender face panel  
having an array of rows and columns of stud  
formations and a female gender face panel having an  
array of socket formations corresponding to the male  
array of studs, the studs and sockets on the male and  
female gender face panels are spaced from one another  
by a distance of substantially  $2x$ , where  $x$  is the  
distance between the edge of the panel and the  
nearest extremity of a respective stud or socket.

30. An assemblage comprising a plurality of image  
elements having commonly coded image edge portions  
which permit image elements to be positioned in an  
edge adjacent relationship in a plurality of  
configurations in which the commonly coded image edge  
portions of adjacent elements are matched  
substantially to one another.

31. An assemblage according to claim 30, wherein a  
respective image element comprises upper and lower  
edges and two side edges such that the image element  
is substantially rectangular or square, the upper

edge being coded to match with the lower edge and the side edges coded to match one another.

- 5 32. An assemblage according to any of claims 30 or 31, wherein a respective image element comprises upper and lower edges and two side edges such that the image element is substantially rectangular or square, the image elements being provided with first and second opposed edges of a first common image coding and third and fourth edges of a second common image coding.
- 10
- 15 33. An assemblage according to claim 32, wherein the coded image element edge portions are coded imagewise such that the coding of the edge portions is effected by portions of a general image or scene depicted upon relevant image elements.
- 20 34. An assemblage according to any of claims 30 to 33, wherein the coded image element edge portions are colour coded by means of coloured edge zones.
- 25 35. An assemblage according to claim 34, wherein the coloured edge zones comprise a backing to a primary image, character or other emblem depicted on the element.
- 30 36. A toy building construction kit or set comprising:
- i) a plurality of a toy building blocks including face panels (preferably substantially

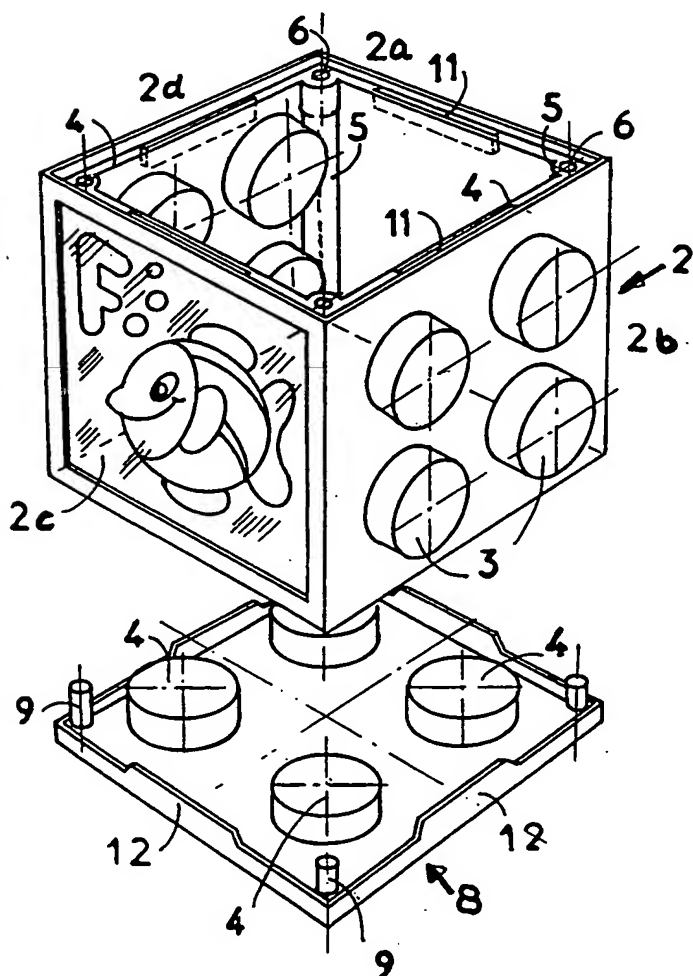
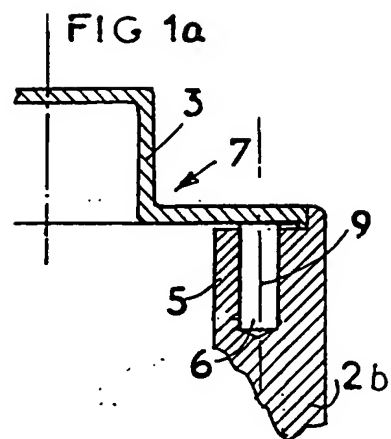
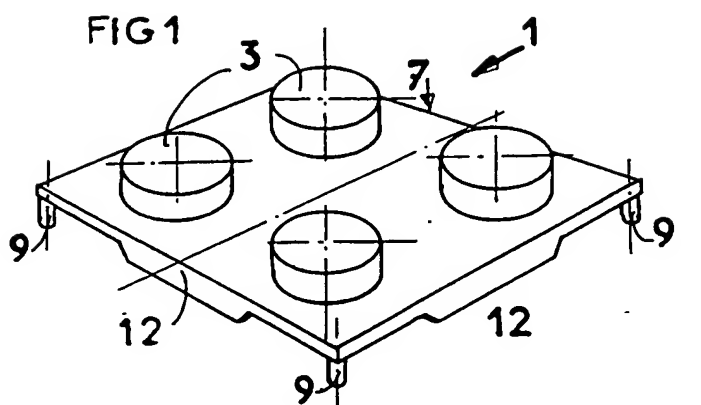
perpendicular face panels) provided with connection formation means facilitating connection with an adjacently arranged blocks; and,

5

- ii) a plurality of image elements for mounting on substantially planar faces of respective blocks, the image elements having commonly coded image edge portions permitting image element carrying blocks to be positioned in an edge adjacent relationship in a plurality of configurations in which the image edge portions of adjacent elements are matched substantially to one another.

10

10/030498



10/030498

FIG 2a

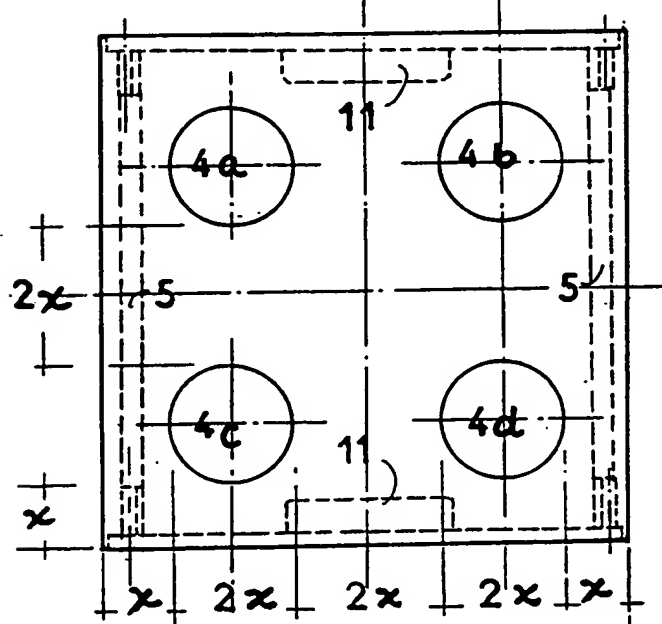
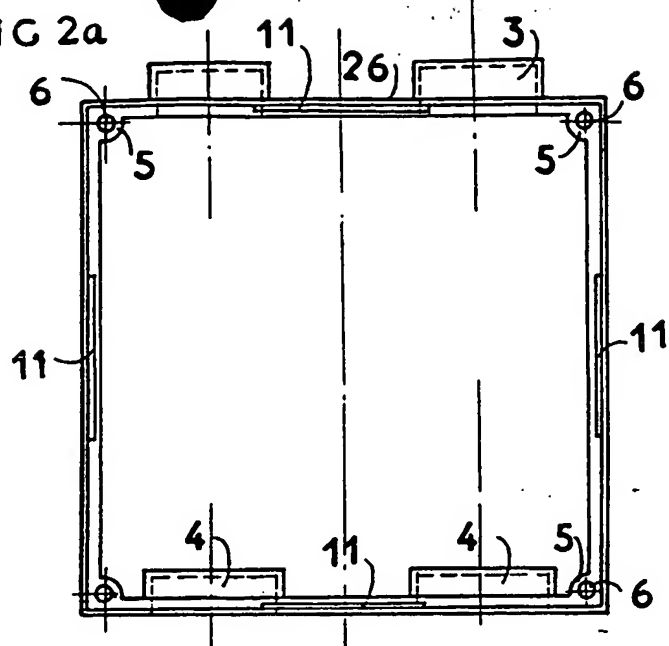


FIG 2b

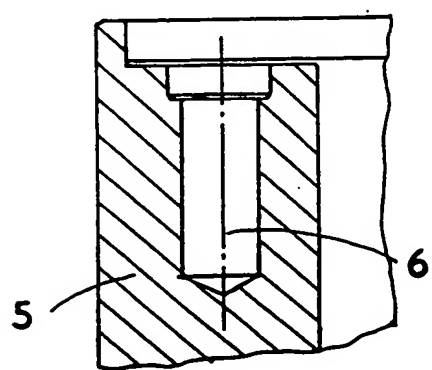


FIG 2c

FIG 3a

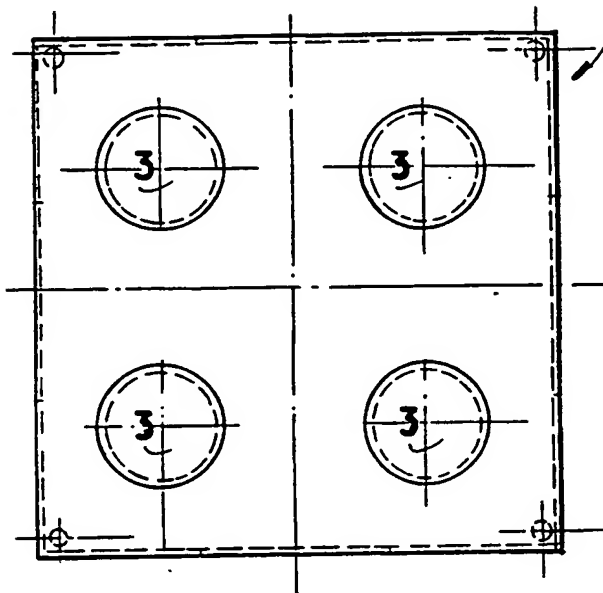


FIG 3b

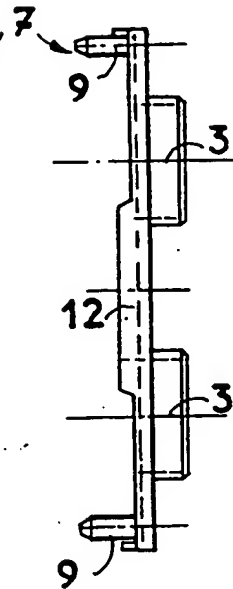


FIG 5

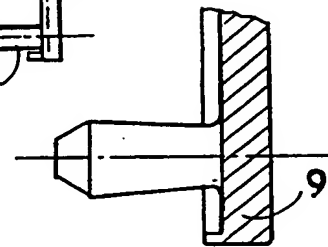


FIG 4a

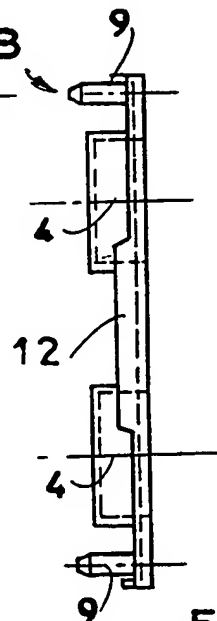
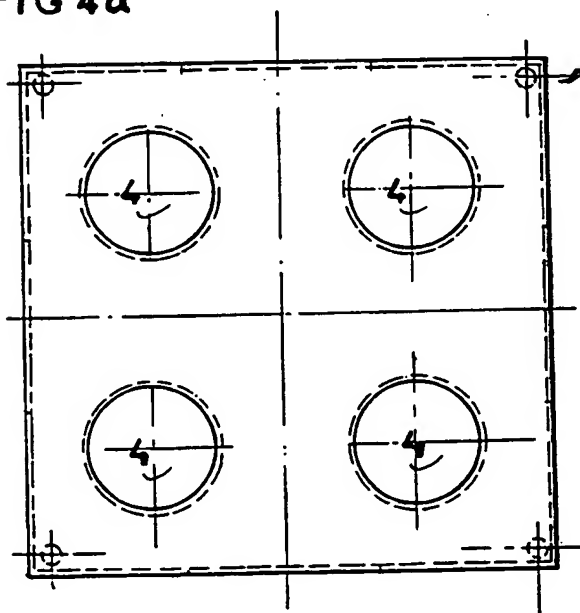


FIG 4b

10/030498

FIG 6

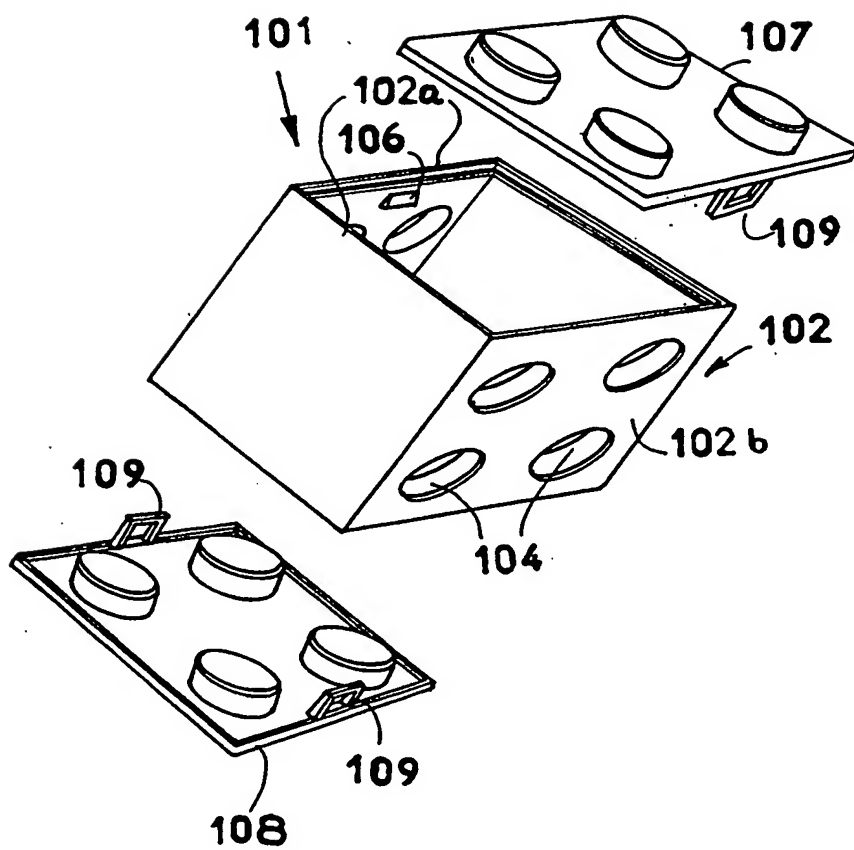
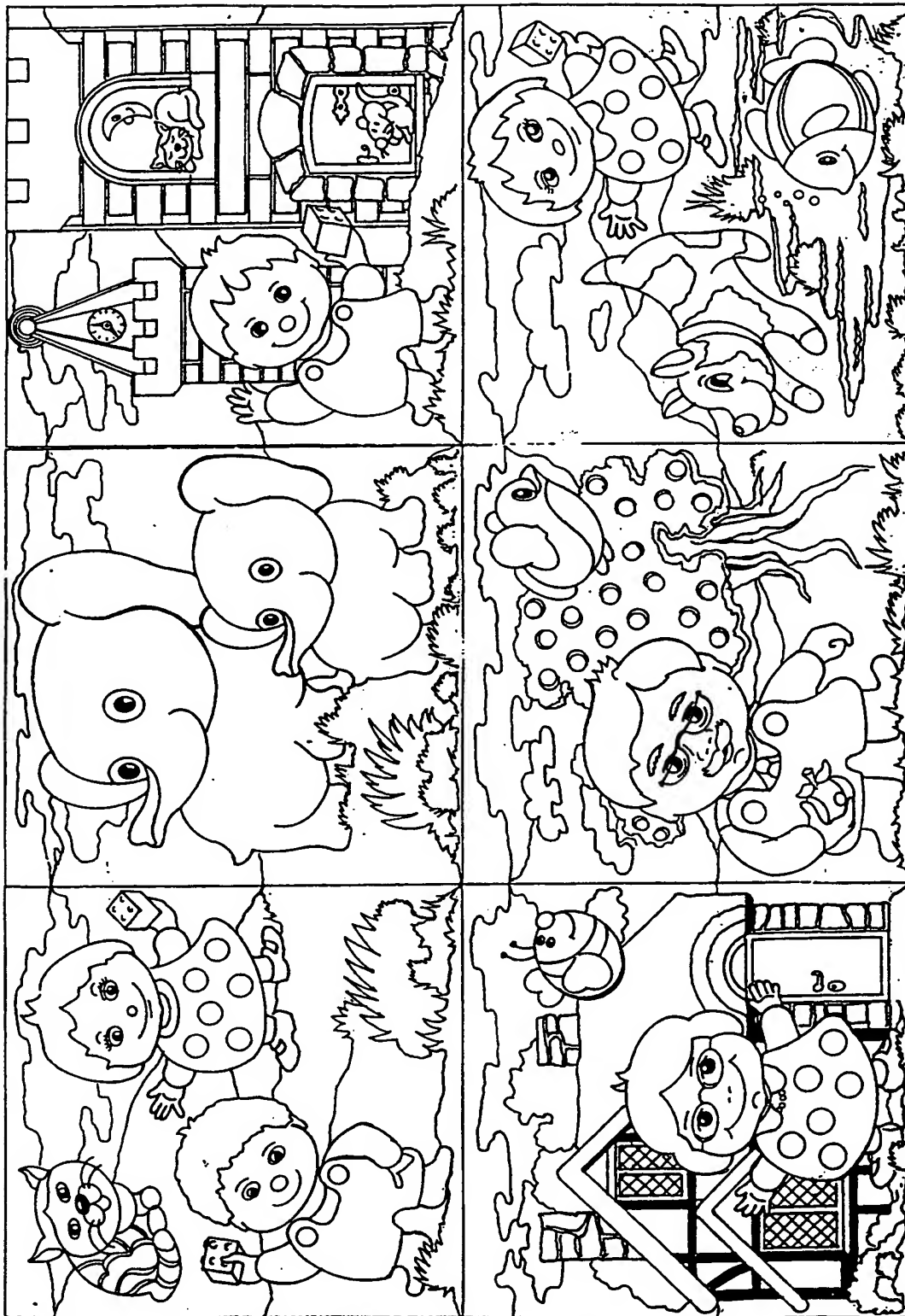






FIG 8



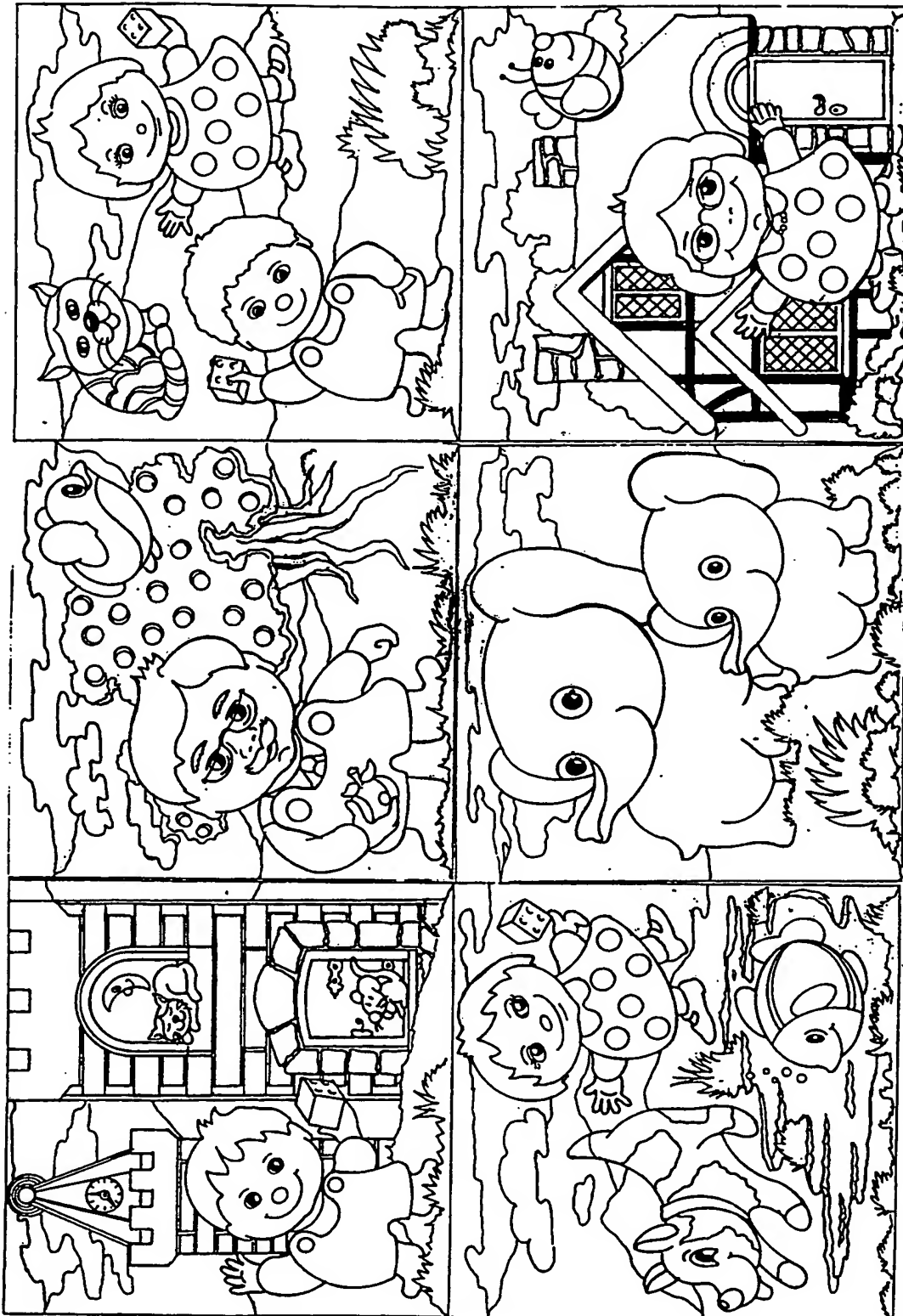


FIG 9

## C. (Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	GB 625 076 A (TAYLOR WILLIE) 21 June 1949 (1949-06-21) page 1, line 67-82 page 2, line 9-15 figures 1,3,4	30-36
Y A		28 1,4, 6-12,15, 17,19
X	US 5 799 943 A (MORGAN JEFFREY D) 1 September 1998 (1998-09-01) column 6, line 54 -column 7, line 8 figure 10	1,4-14, 19
X	DE 28 26 401 A (INSOR INSTITUT FÜR SOZIALE REHABILITATION) 20 December 1979 (1979-12-20) page 8, line 10-12 page 10, line 20,21 page 12, line 10-17 figures 1,2,5,12,13	20-25,27
A		16,18,26
X	US 4 160 337 A (FISCHER ARTUR) 10 July 1979 (1979-07-10) column 1, line 37-46 column 1, line 63 -column 2, line 5 figures	20-25
A		16,18, 26,27

A. CLASSIFICATION OF SUBJECT MATTER  
IPC 7 A63H33/08 F9/12

**According to International Patent Classification (IPC) or to both national classification and IPC**

**B. FIELDS SEARCHED**

Minimum documentation searched (classification system followed by classification symbols)

IPC 7 A63H A63F

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practical, search terms used)

EPO-Internal, WPI Data, PAJ

### C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	GB 908 097 A (CHRISTIANSEN G K) 17 October 1962 (1962-10-17)	1,2, 8-10, 12-15, 17,19,29
Y	page 2, line 60-73	
A	page 2, line 113-118 figures 1,11,12	28
	— — — — — -/-	3-5

**X** Further documents are listed in the continuation of box C.

**Y** Patent family members are listed in annex.

• **Special categories of cited documents :**

"A" document defining the general state of the art which is not considered to be of particular relevance

"E" earlier document but published on or after the international filing date

"L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)

"O" document referring to an oral disclosure, use, exhibition or other means

"P" document published prior to the international filing date but later than the priority date claimed

\* Later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention

"X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone

"Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art.

**"&" document member of the same patent family**

Date of the actual completion of the international search

**9 October 2000**

Date of mailing of the international search report

17/10/2000

Name and mailing address of the ISA

European Patent Office, P.B. 5818 Patentlaan 2  
NL - 2280 HV Rijswijk  
Tel. (+31-70) 340-2040, Tx. 31 651 epo nl,  
Fax (+31-70) 340-3018

Authorized officer \_\_\_\_\_

**Chabus, H**

Patent document cited in search report	Publication date	Patent family member(s)	Publication date
GB 908097	A	NONE	
GB 625076	A	NONE	
US 5799943	A	01-09-1998	NONE
DE 2826401	A	20-12-1979	NONE
US 4160337	A	10-07-1979	
		DE 7628472 U	02-03-1978
		AT 359885 B	10-12-1980
		AT 491177 A	15-04-1980
		AU 496856 A	02-11-1978
		BE 858565 A	02-01-1978
		CH 622434 A	15-04-1981
		CS 202078 B	31-12-1980
		DD 131903 A	09-08-1978
		DK 339277 A, B	12-03-1978
		ES 230670 U	01-11-1977
		FR 2364048 A	07-04-1978
		GB 1584966 A	18-02-1981
		HU 174308 B	28-12-1979
		IT 1084211 B	25-05-1985
		JP 53036334 A	04-04-1978
		NL 7708858 A	14-03-1978
		PL 200580 A	10-04-1978
		SE 432200 B	26-03-1984
		SE 7708997 A	12-03-1978
		SU 700048 A	25-11-1979

# PATENT COOPERATION TREATY

# PCT

## INTERNATIONAL SEARCH REPORT

(PCT Article 18 and Rules 43 and 44)

Applicant's or agent's file reference <b>P79975W0</b>	<b>FOR FURTHER ACTION</b> see Notification of Transmittal of International Search Report (Form PCT/ISA/220) as well as, where applicable, item 5 below.	
International application No. <b>PCT/GB 00/ 02620</b>	International filing date (day/month/year) <b>07/07/2000</b>	(Earliest) Priority Date (day/month/year) <b>10/07/1999</b>
Applicant  <b>KIBLO LIMITED</b>		

This International Search Report has been prepared by this International Searching Authority and is transmitted to the applicant according to Article 18. A copy is being transmitted to the International Bureau.

This International Search Report consists of a total of 3 sheets.

☒ It is also accompanied by a copy of each prior art document cited in this report.

**1. Basis of the report**

a. With regard to the language, the international search was carried out on the basis of the international application in the language in which it was filed, unless otherwise indicated under this item.

☐ the international search was carried out on the basis of a translation of the international application furnished to this Authority (Rule 23.1(b)).

b. With regard to any nucleotide and/or amino acid sequence disclosed in the international application, the international search was carried out on the basis of the sequence listing :

☐ contained in the international application in written form.

☐ filed together with the international application in computer readable form.

☐ furnished subsequently to this Authority in written form.

☐ furnished subsequently to this Authority in computer readable form.

☐ the statement that the subsequently furnished written sequence listing does not go beyond the disclosure in the international application as filed has been furnished.

☐ the statement that the information recorded in computer readable form is identical to the written sequence listing has been furnished

2. ☐ Certain claims were found unsearchable (See Box I).

3. ☐ Unity of invention is lacking (see Box II).

4. With regard to the title,

☒ the text is approved as submitted by the applicant.

☐ the text has been established by this Authority to read as follows:

5. With regard to the abstract,

☒ the text is approved as submitted by the applicant.

☐ the text has been established, according to Rule 38.2(b), by this Authority as it appears in Box III. The applicant may, within one month from the date of mailing of this international search report, submit comments to this Authority.

6. The figure of the drawings to be published with the abstract is Figure No.

☐ as suggested by the applicant.

☒ because the applicant failed to suggest a figure.

☐ because this figure better characterizes the invention.

1

☐ None of the figures.

## INTERNATIONAL SEARCH REPORT

International Application No.

GB 00/02620

## A. CLASSIFICATION OF SUBJECT MATTER

IPC 7 A63H33/08 A63F9/12

According to International Patent Classification (IPC) or to both national classification and IPC

## B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

IPC 7 A63H A63F

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practical, search terms used)

EPO-Internal, WPI Data, PAJ

## C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	GB 908 097 A (CHRISTIANSEN G K) 17 October 1962 (1962-10-17)  page 2, line 60-73 page 2, line 113-118 figures 1,11,12	1,2, 8-10, 12-15, 17,19,29
Y		28
A		3-5

☒ Further documents are listed in the continuation of box C.☒ Patent family members are listed in annex.

## \* Special categories of cited documents :

- "A" document defining the general state of the art which is not considered to be of particular relevance
- "E" earlier document but published on or after the international filing date
- "L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)
- "O" document referring to an oral disclosure, use, exhibition or other means
- "P" document published prior to the international filing date but later than the priority date claimed

- "T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention
- "X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone
- "Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art.
- "&" document member of the same patent family

Date of the actual completion of the international search

9 October 2000

Date of mailing of the international search report

17/10/2000

Name and mailing address of the ISA

European Patent Office, P.B. 5818 Patentlaan 2  
NL - 2280 HV Rijswijk  
Tel. (+31-70) 340-2040, Tx. 31 651 epo nl,  
Fax: (+31-70) 340-3016

Authorized officer

Chabus, H



## INTERNATIONAL SEARCH REPORT

International Application No

GB 00/02620

## C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	GB 625 076 A (TAYLOR WILLIE) 21 June 1949 (1949-06-21) page 1, line 67-82 page 2, line 9-15 figures 1,3,4	30-36
Y A		28 1,4, 6-12,15, 17,19
X	US 5 799 943 A (MORGAN JEFFREY D) 1 September 1998 (1998-09-01) column 6, line 54 -column 7, line 8 figure 10	1,4-14, 19
X	DE 28 26 401 A (INSOR INSTITUT FÜR SOZIALE REHABILITATION) 20 December 1979 (1979-12-20) page 8, line 10-12 page 10, line 20,21 page 12, line 10-17 figures 1,2,5,12,13	20-25,27
A		16,18,26
X	US 4 160 337 A (FISCHER ARTUR) 10 July 1979 (1979-07-10) column 1, line 37-46 column 1, line 63 -column 2, line 5 figures	20-25
A		16,18, 26,27

# INTERNATIONAL SEARCH REPORT

Information on patent family members

International Application No

GB 00/02620

Patent document cited in search report	Publication date	Patent family member(s)	Publication date
GB 908097	A	NONE	
GB 625076	A	NONE	
US 5799943	A	01-09-1998	NONE
DE 2826401	A	20-12-1979	NONE
US 4160337	A	10-07-1979	
		DE 7628472 U	02-03-1978
		AT 359885 B	10-12-1980
		AT 491177 A	15-04-1980
		AU 496856 A	02-11-1978
		BE 858565 A	02-01-1978
		CH 622434 A	15-04-1981
		CS 202078 B	31-12-1980
		DD 131903 A	09-08-1978
		DK 339277 A, B	12-03-1978
		ES 230670 U	01-11-1977
		FR 2364048 A	07-04-1978
		GB 1584966 A	18-02-1981
		HU 174308 B	28-12-1979
		IT 1084211 B	25-05-1985
		JP 53036334 A	04-04-1978
		NL 7708858 A	14-03-1978
		PL 200580 A	10-04-1978
		SE 432200 B	26-03-1984
		SE 7708997 A	12-03-1978
		SU 700048 A	25-11-1979

# PATENT COOPERATION TREATY

PCT/GB00/02620

From the INTERNATIONAL BUREAU

**PCT**

## NOTIFICATION OF ELECTION

(PCT Rule 61.2)

To:

Commissioner  
US Department of Commerce  
United States Patent and Trademark  
Office, PCT  
2011 South Clark Place Room  
CP2/5C24  
Arlington, VA 22202  
ETATS-UNIS D'AMERIQUE  
in its capacity as elected Office

<b>Date of mailing (day/month/year)</b> 13 March 2001 (13.03.01)	<b>Applicant's or agent's file reference</b> P79975WO
<b>International application No.</b> PCT/GB00/02620	<b>Priority date (day/month/year)</b> 10 July 1999 (10.07.99)
<b>International filing date (day/month/year)</b> 07 July 2000 (07.07.00)	
<b>Applicant</b> DAVIS, Nicholas et al	

1. The designated Office is hereby notified of its election made:

☒ in the demand filed with the International Preliminary Examining Authority on:  
05 February 2001 (05.02.01)

☐ in a notice effecting later election filed with the International Bureau on:

2. The election ☒ was  
☐ was not

made before the expiration of 19 months from the priority date or, where Rule 32 applies, within the time limit under Rule 32.2(b).

<b>The International Bureau of WIPO</b> 34, chemin des Colombettes 1211 Geneva 20, Switzerland Facsimile No.: (41-22) 740.14.35	<b>Authorized officer</b> Pascal Piriou Telephone No.: (41-22) 338.83.38
--	--

From the  
INTERNATIONAL PRELIMINARY EXAMINING AUTHORITY

OFFICE DIARY	/
PCT COMUS	GMD

To:

DAVIES, Gregory M.  
URQUHART-DYKES & LORD  
Alexandra House  
Alexandra Road  
Swansea SA1 5ED  
GRANDE BRETAGNE

RECEIVED

17 SEP 2001

URQUHART-DYKES & LORD  
SWANSEA

NOTIFICATION OF TRANSMITTAL OF  
THE INTERNATIONAL PRELIMINARY  
EXAMINATION REPORT  
(PCT Rule 71.1)

Date of mailing  
(day/month/year)

14.09.2001

Applicant's or agent's file reference  
P79975WO

**IMPORTANT NOTIFICATION**

International application No.  
PCT/GB00/02620

International filing date (day/month/year)  
07/07/2000

Priority date (day/month/year)  
10/07/1999

Applicant  
KIBLO LIMITED et al.

1. The applicant is hereby notified that this International Preliminary Examining Authority transmits herewith the international preliminary examination report and its annexes, if any, established on the international application.
2. A copy of the report and its annexes, if any, is being transmitted to the International Bureau for communication to all the elected Offices.
3. Where required by any of the elected Offices, the International Bureau will prepare an English translation of the report (but not of any annexes) and will transmit such translation to those Offices.

**4. REMINDER**

The applicant must enter the national phase before each elected Office by performing certain acts (filing translations and paying national fees) within 30 months from the priority date (or later in some Offices) (Article 39(1)) (see also the reminder sent by the International Bureau with Form PCT/IB/301).

Where a translation of the international application must be furnished to an elected Office, that translation must contain a translation of any annexes to the international preliminary examination report. It is the applicant's responsibility to prepare and furnish such translation directly to each elected Office concerned.

For further details on the applicable time limits and requirements of the elected Offices, see Volume II of the PCT Applicant's Guide.

Name and mailing address of the IPEA/

 European Patent Office  
D-80298 Munich  
Tel. +49 89 2399 - 0 Tx: 523656 epmu d  
Fax: +49 89 2399 - 4465

Authorized officer

Gauert, B

Tel. +49 89 2399-8945



## PATENT COOPERATION TREATY

## PCT

## INTERNATIONAL PRELIMINARY EXAMINATION REPORT



(PCT Article 36 and Rule 70)

Applicant's or agent's file reference <b>P79975WO</b>	<b>FOR FURTHER ACTION</b> See Notification of Transmittal of International Preliminary Examination Report (Form PCT/IPEA/416)	
International application No. <b>PCT/GB00/02620</b>	International filing date (day/month/year) <b>07/07/2000</b>	Priority date (day/month/year) <b>10/07/1999</b>
International Patent Classification (IPC) or national classification and IPC <b>A63H33/08</b>		
Applicant <b>KIBLO LIMITED et al.</b>		

1. This international preliminary examination report has been prepared by this International Preliminary Examining Authority and is transmitted to the applicant according to Article 36.
2. This REPORT consists of a total of 10 sheets, including this cover sheet.
- ☐ This report is also accompanied by ANNEXES, i.e. sheets of the description, claims and/or drawings which have been amended and are the basis for this report and/or sheets containing rectifications made before this Authority (see Rule 70.16 and Section 607 of the Administrative Instructions under the PCT).
- These annexes consist of a total of sheets.

3. This report contains indications relating to the following items:

- I ☒ Basis of the report
- II ☐ Priority
- III ☐ Non-establishment of opinion with regard to novelty, inventive step and industrial applicability
- IV ☒ Lack of unity of invention
- V ☒ Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement
- VI ☐ Certain documents cited
- VII ☒ Certain defects in the international application
- VIII ☒ Certain observations on the international application

Date of submission of the demand  <b>05/02/2001</b>	Date of completion of this report  <b>14.09.2001</b>
Name and mailing address of the international preliminary examining authority:   <b>European Patent Office</b> <b>D-80298 Munich</b> <b>Tel. +49 89 2399 - 0 Tx: 523656 epmu d</b> <b>Fax: +49 89 2399 - 4465</b>	Authorized officer  <b>Squeri, M</b>  Telephone No. <b>+49 89 2399 8417</b> 

**INTERNATIONAL PRELIMINARY  
EXAMINATION REPORT**

International application No. PCT/GB00/02620

**I. Basis of the report**

1. With regard to the **elements** of the international application (*Replacement sheets which have been furnished to the receiving Office in response to an invitation under Article 14 are referred to in this report as "originally filed" and are not annexed to this report since they do not contain amendments (Rules 70.16 and 70.17):*)

**Description, pages:**

1-18 as originally filed

**Claims, No.:**

1-36 as originally filed

**Drawings, sheets:**

1/7-7/7 as originally filed

2. With regard to the **language**, all the elements marked above were available or furnished to this Authority in the language in which the international application was filed, unless otherwise indicated under this item.

These elements were available or furnished to this Authority in the following language: , which is:

- ☐ the language of a translation furnished for the purposes of the international search (under Rule 23.1(b)).
- ☐ the language of publication of the international application (under Rule 48.3(b)).
- ☐ the language of a translation furnished for the purposes of international preliminary examination (under Rule 55.2 and/or 55.3).

3. With regard to any **nucleotide and/or amino acid sequence** disclosed in the international application, the international preliminary examination was carried out on the basis of the sequence listing:

- ☐ contained in the international application in written form.
- ☐ filed together with the international application in computer readable form.
- ☐ furnished subsequently to this Authority in written form.
- ☐ furnished subsequently to this Authority in computer readable form.
- ☐ The statement that the subsequently furnished written sequence listing does not go beyond the disclosure in the international application as filed has been furnished.
- ☐ The statement that the information recorded in computer readable form is identical to the written sequence listing has been furnished.

4. The amendments have resulted in the cancellation of:

- ☐ the description, pages:
- ☐ the claims, Nos.:

**INTERNATIONAL PRELIMINARY  
EXAMINATION REPORT**

International application No. PCT/GB00/02620

☐ the drawings, sheets:

5. ☐ This report has been established as if (some of) the amendments had not been made, since they have been considered to go beyond the disclosure as filed (Rule 70.2(c)):

*(Any replacement sheet containing such amendments must be referred to under item 1 and annexed to this report.)*

6. Additional observations, if necessary:

**IV. Lack of unity of invention**

1. In response to the invitation to restrict or pay additional fees the applicant has:

- ☐ restricted the claims.  
☐ paid additional fees.  
☐ paid additional fees under protest.  
☐ neither restricted nor paid additional fees.

2. ☒ This Authority found that the requirement of unity of invention is not complied and chose, according to Rule 68.1, not to invite the applicant to restrict or pay additional fees.

3. This Authority considers that the requirement of unity of invention in accordance with Rules 13.1, 13.2 and 13.3 is

- ☐ complied with.  
☒ not complied with for the following reasons:  
**see separate sheet**

4. Consequently, the following parts of the international application were the subject of international preliminary examination in establishing this report:

- ☒ all parts.  
☐ the parts relating to claims Nos. .

**V. Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement**

1. Statement

Novelty (N)	Yes:	Claims 6,11,22
	No:	Claims 1-5,7-10,12-21,23-36
Inventive step (IS)	Yes:	Claims
	No:	Claims 1-36

**INTERNATIONAL PRELIMINARY  
EXAMINATION REPORT**

International application No. PCT/GB00/02620

Industrial applicability (IA)    Yes:    Claims    1-36  
   No:    Claims

2. Citations and explanations  
    **see separate sheet**

**VII. Certain defects in the international application**

The following defects in the form or contents of the international application have been noted:  
**see separate sheet**

**VIII. Certain observations on the international application**

The following observations on the clarity of the claims, description, and drawings or on the question whether the claims are fully supported by the description, are made:  
**see separate sheet**



Reference is made to the following documents:

- D1: GB-A-908097
- D2: GB-A-625076
- D3: US-A-5799943
- D4: DE-A-2826401
- D5: US-A-4160337
- D6: GB-A-2118447; cited by the applicant.
- D7: GB-A-1350621; cited by the applicant.
- D8: GB-A-1376301; cited by the applicant.
- D9: US-A-5683283; cited by the applicant.

**SECTION IV:**

1. The application does not meet the requirements of unity of invention set forth in Rule 13.1 PCT, since the two following different groups of inventions are claimed in it:
  - a. Claims 1-19 and 29: building blocks with studs and sockets;
  - b. Claim 28: building blocks with studs, sockets and image elements;
  - c. Claims 20-27: method for assembling hollow building blocks;
  - d. Claims 30-35: assemblage of a plurality of image elements; and,
  - e. Claim 36: building blocks with image elements.

Therefore, the subject matters of claims 1, 19-20, 28-30 and 36 are not so linked as to form a single general inventive concept and, accordingly, the application lacks of unity within the meaning of Rule 13.1 PCT.

**SECTION V:**

2. The document D1 is regarded as being the closest prior art to the subject-matter of claim 1, and discloses a toy building block including:
  - a. a first pair of respectively transversely extending face panels provided with male gender connection formation means 2 facilitating connection with respective adjacently arranged blocks, the male gender connection formation means for each face panel comprising at least two substantially identical studs;
  - b. a second pair of respectively transversely extending face panels provided with female gender connection formation means 3 facilitating connection with

respective adjacently arranged blocks, the female gender connection formation means for each face panel comprising at least two substantially identical sockets;

wherein, the sockets are shaped and dimensioned to be push-fit/interference-fit engageable with respective studs on adjacently connecting corresponding blocks, the studs and sockets on the face panels of the block being so spaced and configured to permit connection with opposite gender face panels in a plurality of connection configurations, including a face panel aligned configuration and a face panel overlap configuration (see Search Report).

The subject-matter of claim 1 of the present application has the same technical features as the device disclosed in D1 and therefore is not novel. Consequently claim 1 does not meet the requirements set forth in Article 33.2 PCT.

3. Document D3, considered independently from D1, is also considered to destroy the novelty of claim 1 (see Search Report).
4. Each of the documents D1 and D3, discloses also a toy building construction system or kit. Therefore they are considered to destroy also the novelty of claim 19 (Article 33.2 PCT).
5. The document D4 is regarded as being the closest prior art to the subject-matter of claim 20, and discloses a method of manufacturing a toy building block, the method comprising assembling:
  - a. a moulded plastics shell element 10 including wall panels moulded to be configured rigidly extending transversely to one another in fixed relationship with a defined angle therebetween; and,
  - b. a separate wall panel 13 element connecting with the walled shell element to close an interior of the block.

The subject-matter of claim 20 of the present application has the same technical features as the device disclosed in D4 and therefore is not novel. Consequently claim 20 does not meet the requirements set forth in Article 33.2 PCT.

6. Document D5, considered independently from D4, is also considered to destroy the novelty of claim 20 (see Search Report).

7. The document D3 is regarded as being the closest prior art to the subject-matter of claim 28, and discloses an assemblage comprising a plurality of adjacently connected blocks 31 according to any of claims 1 to 19 (see Point 3 of the present Opinion), respective blocks including respective image elements 46 having commonly coded image edge portions which permit image elements to be positioned in an edge adjacent relationship in a plurality of configurations in which the commonly coded image edge portions of adjacent elements are matched substantially to one another.

The subject-matter of claim 28 of the present application has the same technical features as the device disclosed in D3 and therefore is not novel. Consequently claim 28 does not meet the requirements set forth in Article 33.2 PCT.

8. Document D8, considered independently from D3, is also considered to destroy the novelty of claim 28.

9. The document D6 is regarded as being the closest prior art to the subject-matter of claim 29, and discloses a building block 13 comprising a male gender face panel having an array of rows and columns of stud formations 12 and a female gender face panel having an array of socket formations corresponding to the male array of studs, the studs and sockets on the male and female gender face panels are spaced from one another by a distance of substantially  $2x$ , where  $x$  is the distance between the edge of the panel and the nearest extremity of a respective stud or socket.

In particular, it is considered that the block element 13 is composed by 8 basic block elements 7, therefore, the distance between two studs is twice the distance between the edge of the panel and the nearest extremity of a respective stud. This applies also to the sockets, since they are designed to match.

The subject-matter of claim 29 of the present application has the same technical features as the device disclosed in D6 and therefore is not novel. Consequently claim 28 does not meet the requirements set forth in Article 33.2 PCT.

10. The document D2 is regarded as being the closest prior art to the subject-matter of claim 30, and discloses an assemblage comprising a plurality of image elements A having commonly coded image edge portions which permit image elements to be positioned in an edge adjacent relationship in a plurality of configurations in which the

commonly coded image edge portions of adjacent elements are matched substantially to one another.

The subject-matter of claim 30 of the present application has the same technical features as the device disclosed in D2 and therefore is not novel. Consequently claim 30 does not meet the requirements set forth in Article 33.2 PCT.

11. Each of the documents D3, D4 and D9, considered independently from D3, is also considered to destroy the novelty of claim 30.
12. The document D2 is regarded as being the closest prior art to the subject-matter of claim 36, and discloses a toy building construction kit or set comprising:
  - a. a plurality of toy building blocks A including face panels (preferably substantially perpendicular face panels) provided with connection formation means B facilitating connection with adjacently arranged blocks; and,
  - b. a plurality of image elements for mounting on substantially planar faces of respective blocks, the image elements having commonly coded image edge portions permitting image element carrying blocks to be positioned in an edge adjacent relationship in a plurality of configurations in which the image edge portions of adjacent elements are matched substantially to one another.

The subject-matter of claim 36 of the present application has the same technical features as the device disclosed in D2 and therefore is not novel. Consequently claim 36 does not meet the requirements set forth in Article 33.2 PCT.

13. Each of the documents D3 and D4, considered independently from D3, is also considered to destroy the novelty of claim 36.
14. Furthermore, the following objections about the dependent claims are raised:

Claims 2-5, 7-10 and 12-17  
No novel feature can be perceived with regard to D1, or D3.

Claims 21, 23-27  
No novel feature can be perceived with regard to D4 and D5.

Claims 31-35  
No novel feature can be perceived with regard to D2, D3 and D4.

Claims 6, 11 and 22

They appear to relate to minor constructional features which, insofar as not directly disclosed in the documents D2, D3 or D8, appear to relate to obvious modifications thereof. Such features will be selected and used by the man skilled in the art as and when he needs them, without any inventive thought being required. The subject matter of claims 6, 11 and 22, therefore, does not meet the requirements set forth in Article 33 PCT

**SECTION VII:**

15. The features of the claims are not provided with reference signs placed in parentheses (Rule 6.2.b PCT).
16. Contrary to the requirements of Rule 5.1.a.ii PCT, the relevant background art disclosed in the documents D1-D5 is not mentioned in the description, nor are these documents identified therein.
17. The wording "incuding" of claim 28, page 25- line 2, should probably have read "including".

**SECTION VIII:**

18. Although claims 1 and 29 have been drafted as separate independent claims, they appear to relate effectively to the same subject-matter and to differ from each other only with regard to the definition of the subject-matter for which protection is sought. The aforementioned claims therefore lack conciseness (Article 6 PCT).
19. The same objection raised at point 21, here above, against claims 1 and 29 is raised also against claims 19 and 36 and against claims 28 and 30.
20. Moreover, lack of clarity of the claims as a whole arises, since the plurality of independent claims makes it difficult, if not impossible, to determine the matter for which protection is sought, and places an undue burden on others seeking to establish the extent of the protection.

Hence, claims 1, 19-20, 28-30 and 36 do not meet the requirements of Article 6 PCT.

21. Claim 36, paragraph i): it is not clear from the wording whether it is claimed a plurality of different blocks or if the block are all of the same type ("a toy building blocks"). The same clarity problem results at the end of the paragraph, where it is written "... an adjacently arranged blocks" (Article 6 PCT).

REC'D 18 SEP 2001

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# INTERNATIONAL PRELIMINARY EXAMINATION REPORT

(PCT Article 36 and Rule 70)

Applicant's or agent's file reference <b>P79975WO</b>	<b>FOR FURTHER ACTION</b> See Notification of Transmittal of International Preliminary Examination Report (Form PCT/IPEA/416)	
International application No. <b>PCT/GB00/02620</b>	International filing date (day/month/year) <b>07/07/2000</b>	Priority date (day/month/year) <b>10/07/1999</b>
International Patent Classification (IPC) or national classification and IPC <b>A63H33/08</b>		
Applicant <b>KIBLO LIMITED et al.</b>		

1. This international preliminary examination report has been prepared by this International Preliminary Examining Authority and is transmitted to the applicant according to Article 36.



2. This REPORT consists of a total of 10 sheets, including this cover sheet.

- ☐ This report is also accompanied by ANNEXES, i.e. sheets of the description, claims and/or drawings which have been amended and are the basis for this report and/or sheets containing rectifications made before this Authority (see Rule 70.16 and Section 607 of the Administrative Instructions under the PCT).

These annexes consist of a total of sheets.

3. This report contains indications relating to the following items:

- I ☒ Basis of the report
- II ☐ Priority
- III ☐ Non-establishment of opinion with regard to novelty, inventive step and industrial applicability
- IV ☒ Lack of unity of invention
- V ☒ Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement
- VI ☐ Certain documents cited
- VII ☒ Certain defects in the international application
- VIII ☒ Certain observations on the international application

Date of submission of the demand <b>05/02/2001</b>	Date of completion of this report <b>14.09.2001</b>
Name and mailing address of the international preliminary examining authority:  <b>European Patent Office D-80298 Munich Tel. +49 89 2399 - 0 Tx: 523656 epmu d Fax: +49 89 2399 - 4465</b>	Authorized officer <b>Squeri, M</b> Telephone No. <b>+49 89 2399 8417</b> 

**INTERNATIONAL PRELIMINARY  
EXAMINATION REPORT**

International application No. PCT/GB00/02620

**I. Basis of the report**

1. With regard to the **elements** of the international application (*Replacement sheets which have been furnished to the receiving Office in response to an invitation under Article 14 are referred to in this report as "originally filed" and are not annexed to this report since they do not contain amendments (Rules 70.16 and 70.17):*):

**Description, pages:**

1-18 as originally filed

**Claims, No.:**

1-36 as originally filed

**Drawings, sheets:**

1/7-7/7 as originally filed

2. With regard to the **language**, all the elements marked above were available or furnished to this Authority in the language in which the international application was filed, unless otherwise indicated under this item.

These elements were available or furnished to this Authority in the following language: , which is:

- ☐ the language of a translation furnished for the purposes of the international search (under Rule 23.1(b)).
- ☐ the language of publication of the international application (under Rule 48.3(b)).
- ☐ the language of a translation furnished for the purposes of international preliminary examination (under Rule 55.2 and/or 55.3).

3. With regard to any **nucleotide and/or amino acid sequence** disclosed in the international application, the international preliminary examination was carried out on the basis of the sequence listing:

- ☐ contained in the international application in written form.
- ☐ filed together with the international application in computer readable form.
- ☐ furnished subsequently to this Authority in written form.
- ☐ furnished subsequently to this Authority in computer readable form.
- ☐ The statement that the subsequently furnished written sequence listing does not go beyond the disclosure in the international application as filed has been furnished.
- ☐ The statement that the information recorded in computer readable form is identical to the written sequence listing has been furnished.

4. The amendments have resulted in the cancellation of:

- ☐ the description, pages:
- ☐ the claims, Nos.:



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☐ the drawings, sheets:

5. ☐ This report has been established as if (some of) the amendments had not been made, since they have been considered to go beyond the disclosure as filed (Rule 70.2(c)):

*(Any replacement sheet containing such amendments must be referred to under item 1 and annexed to this report.)*

6. Additional observations, if necessary:

**IV. Lack of unity of invention**

1. In response to the invitation to restrict or pay additional fees the applicant has:

- ☐ restricted the claims.  
☐ paid additional fees.  
☐ paid additional fees under protest.  
☐ neither restricted nor paid additional fees.

2. ☒ This Authority found that the requirement of unity of invention is not complied and chose, according to Rule 68.1, not to invite the applicant to restrict or pay additional fees.

3. This Authority considers that the requirement of unity of invention in accordance with Rules 13.1, 13.2 and 13.3 is

- ☐ complied with.  
☒ not complied with for the following reasons:  
**see separate sheet**

4. Consequently, the following parts of the international application were the subject of international preliminary examination in establishing this report:

- ☒ all parts.  
☐ the parts relating to claims Nos. .

**V. Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement**

1. Statement

Novelty (N)	Yes:	Claims 6,11,22
	No:	Claims 1-5,7-10,12-21,23-36
Inventive step (IS)	Yes:	Claims
	No:	Claims 1-36

**INTERNATIONAL PRELIMINARY  
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Industrial applicability (IA)    Yes:    Claims    1-36  
   No:    Claims

2. Citations and explanations  
    **see separate sheet**

**VII. Certain defects in the international application**

The following defects in the form or contents of the international application have been noted:  
**see separate sheet**

**VIII. Certain observations on the international application**

The following observations on the clarity of the claims, description, and drawings or on the question whether the claims are fully supported by the description, are made:  
**see separate sheet**

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Reference is made to the following documents:

- D1: GB-A-908097
- D2: GB-A-625076
- D3: US-A-5799943
- D4: DE-A-2826401
- D5: US-A-4160337
- D6: GB-A-2118447; cited by the applicant.
- D7: GB-A-1350621; cited by the applicant.
- D8: GB-A-1376301; cited by the applicant.
- D9: US-A-5683283; cited by the applicant.

**SECTION IV:**

1. The application does not meet the requirements of unity of invention set forth in Rule 13.1 PCT, since the two following different groups of inventions are claimed in it:
  - a. Claims 1-19 and 29: building blocks with studs and sockets;
  - b. Claim 28: building blocks with studs, sockets and image elements;
  - c. Claims 20-27: method for assembling hollow building blocks;
  - d. Claims 30-35: assemblage of a plurality of image elements; and,
  - e. Claim 36: building blocks with image elements.

Therefore, the subject matters of claims 1, 19-20, 28-30 and 36 are not so linked as to form a single general inventive concept and, accordingly, the application lacks of unity within the meaning of Rule 13.1 PCT.

**SECTION V:**

2. The document D1 is regarded as being the closest prior art to the subject-matter of claim 1, and discloses a toy building block including:
  - a. a first pair of respectively transversely extending face panels provided with male gender connection formation means 2 facilitating connection with respective adjacently arranged blocks, the male gender connection formation means for each face panel comprising at least two substantially identical studs;
  - b. a second pair of respectively transversely extending face panels provided with female gender connection formation means 3 facilitating connection with

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EXAMINATION REPORT - SEPARATE SHEET**

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respective adjacently arranged blocks, the female gender connection formation means for each face panel comprising at least two substantially identical sockets;

wherein, the sockets are shaped and dimensioned to be push-fit/interference-fit engageable with respective studs on adjacently connecting corresponding blocks, the studs and sockets on the face panels of the block being so spaced and configured to permit connection with opposite gender face panels in a plurality of connection configurations, including a face panel aligned configuration and a face panel overlap configuration (see Search Report).

The subject-matter of claim 1 of the present application has the same technical features as the device disclosed in D1 and therefore is not novel. Consequently claim 1 does not meet the requirements set forth in Article 33.2 PCT.

3. Document D3, considered independently from D1, is also considered to destroy the novelty of claim 1 (see Search Report).
4. Each of the documents D1 and D3, discloses also a toy building construction system or kit. Therefore they are considered to destroy also the novelty of claim 19 (Article 33.2 PCT).
5. The document D4 is regarded as being the closest prior art to the subject-matter of claim 20, and discloses a method of manufacturing a toy building block, the method comprising assembling:
  - a. a moulded plastics shell element 10 including wall panels moulded to be configured rigidly extending transversely to one another in fixed relationship with a defined angle therebetween; and,
  - b. a separate wall panel 13 element connecting with the walled shell element to close an interior of the block.

The subject-matter of claim 20 of the present application has the same technical features as the device disclosed in D4 and therefore is not novel. Consequently claim 20 does not meet the requirements set forth in Article 33.2 PCT.

6. Document D5, considered independently from D4, is also considered to destroy the novelty of claim 20 (see Search Report).

7. The document D3 is regarded as being the closest prior art to the subject-matter of claim 28, and discloses an assemblage comprising a plurality of adjacently connected blocks 31 according to any of claims 1 to 19 (see Point 3 of the present Opinion), respective blocks including respective image elements 46 having commonly coded image edge portions which permit image elements to be positioned in an edge adjacent relationship in a plurality of configurations in which the commonly coded image edge portions of adjacent elements are matched substantially to one another.  
  
The subject-matter of claim 28 of the present application has the same technical features as the device disclosed in D3 and therefore is not novel. Consequently claim 28 does not meet the requirements set forth in Article 33.2 PCT.
8. Document D8, considered independently from D3, is also considered to destroy the novelty of claim 28.
9. The document D6 is regarded as being the closest prior art to the subject-matter of claim 29, and discloses a building block 13 comprising a male gender face panel having an array of rows and columns of stud formations 12 and a female gender face panel having an array of socket formations corresponding to the male array of studs, the studs and sockets on the male and female gender face panels are spaced from one another by a distance of substantially  $2x$ , where  $x$  is the distance between the edge of the panel and the nearest extremity of a respective stud or socket.  
  
In particular, it is considered that the block element 13 is composed by 8 basic block elements 7, therefore, the distance between two studs is twice the distance between the edge of the panel and the nearest extremity of a respective stud. This applies also to the sockets, since they are designed to match.  
  
The subject-matter of claim 29 of the present application has the same technical features as the device disclosed in D6 and therefore is not novel. Consequently claim 28 does not meet the requirements set forth in Article 33.2 PCT.
10. The document D2 is regarded as being the closest prior art to the subject-matter of claim 30, and discloses an assemblage comprising a plurality of image elements A having commonly coded image edge portions which permit image elements to be positioned in an edge adjacent relationship in a plurality of configurations in which the

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commonly coded image edge portions of adjacent elements are matched substantially to one another.

The subject-matter of claim 30 of the present application has the same technical features as the device disclosed in D2 and therefore is not novel. Consequently claim 30 does not meet the requirements set forth in Article 33.2 PCT.

11. Each of the documents D3, D4 and D9, considered independently from D3, is also considered to destroy the novelty of claim 30.
12. The document D2 is regarded as being the closest prior art to the subject-matter of claim 36, and discloses a toy building construction kit or set comprising:
  - a. a plurality of toy building blocks A including face panels (preferably substantially perpendicular face panels) provided with connection formation means B facilitating connection with adjacently arranged blocks; and,
  - b. a plurality of image elements for mounting on substantially planar faces of respective blocks, the image elements having commonly coded image edge portions permitting image element carrying blocks to be positioned in an edge adjacent relationship in a plurality of configurations in which the image edge portions of adjacent elements are matched substantially to one another.

The subject-matter of claim 36 of the present application has the same technical features as the device disclosed in D2 and therefore is not novel. Consequently claim 36 does not meet the requirements set forth in Article 33.2 PCT.

13. Each of the documents D3 and D4, considered independently from D3, is also considered to destroy the novelty of claim 36.
14. Furthermore, the following objections about the dependent claims are raised:

Claims 2-5, 7-10 and 12-17  
No novel feature can be perceived with regard to D1, or D3.

Claims 21, 23-27  
No novel feature can be perceived with regard to D4 and D5.

Claims 31-35  
No novel feature can be perceived with regard to D2, D3 and D4.

Claims 6, 11 and 22

They appear to relate to minor constructional features which, insofar as not directly disclosed in the documents D2, D3 or D8, appear to relate to obvious modifications thereof. Such features will be selected and used by the man skilled in the art as and when he needs them, without any inventive thought being required. The subject matter of claims 6, 11 and 22, therefore, does not meet the requirements set forth in Article 33 PCT

**SECTION VII:**

15. The features of the claims are not provided with reference signs placed in parentheses (Rule 6.2.b PCT).
16. Contrary to the requirements of Rule 5.1.a.ii PCT, the relevant background art disclosed in the documents D1-D5 is not mentioned in the description, nor are these documents identified therein.
17. The wording "incuding" of claim 28, page 25- line 2, should probably have read "including".

**SECTION VIII:**

18. Although claims 1 and 29 have been drafted as separate independent claims, they appear to relate effectively to the same subject-matter and to differ from each other only with regard to the definition of the subject-matter for which protection is sought. The aforementioned claims therefore lack conciseness (Article 6 PCT).
19. The same objection raised at point 21, here above, against claims 1 and 29 is raised also against claims 19 and 36 and against claims 28 and 30.
20. Moreover, lack of clarity of the claims as a whole arises, since the plurality of independent claims makes it difficult, if not impossible, to determine the matter for which protection is sought, and places an undue burden on others seeking to establish the extent of the protection.

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Hence, claims 1, 19-20, 28-30 and 36 do not meet the requirements of Article 6 PCT.

21. Claim 36, paragraph i): it is not clear from the wording whether it is claimed a plurality of different blocks or if the block are all of the same type ("a toy building blocks"). The same clarity problem results at the end of the paragraph, where it is written "... an adjacently arranged blocks" (Article 6 PCT).